Kendall A. Smith
Chemical and Biomolecular Engineering Department
Rice University

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Education:

Rice University (2009-present)
PhD, Chemical Engineering
Thesis: All-conjugated Block Copolymers for Organic Photovoltaic Applications

University of Southern California (2005-2009)
M.S. Aerospace Engineering
Emphasis: Fluid Mechanics

Arizona State University (1999 – 2004)
B.S.E., Chemical Engineering and minor in Mathematics
Emphasis: Semiconductor Processing

Employment:

8/2009 – Present	Graduate Student, *Rice University*, Houston, TX
7/2004 – 8/2009	Engineer/Scientist *Boeing Space Environments Team (External Contamination and Plasma) International Space Station Program*, Houston, TX
6/ 2003 – 1/ 2004	Physical Science Technician *USDA/ARS, U.S. Water Conservation Laboratory* Phoenix, AZ
1/ 2001 – 5/ 2004	Tutoring Supervisor *Engineering Tutoring Center, ASU, Tempe, AZ*
6/ 2002 – 8/ 2002	*Research Assistant for Dr. Allen and Dr. Dillner ASU, Tempe, AZ*

Skills:

Experimental: Atom transfer radical polymerization (ATRP), reversible addition−fragmentation chain-transfer (RAFT), Grignard Metathesis (GRIM), copper catalyzed azide alkyne click (CuAAC), and Suzuki polycondensation. Analytical techniques include atomic force microscopy (AFM), grazing incidence small and wide angle X-ray scattering (GISAXS/GIWAXS), differential scanning calorimetry (DSC), size exclusion chromatography (SEC), ^{1}H NMR, ultraviolet and visible spectroscopy (UV/Vis) among others.

Computational: Proficient in Matlab, Fortran, and C++. Familiar with Python, Perl, IDL, VBA, and others. Familiar with Finite Element\Finite Volume methods, Monte Carlo simulations. Comfortable in Linux/Unix environments.

Awards and Honors:

2012 Dean's TA.

2008 Boeing Pride Award
"This award is presented to you in recognition of your outstanding performance and invaluable contribution to the Space Environments Team. Your efforts on improving the numerical modeling within the External Contamination and Plasma Interaction computer codes have been exemplary. You have extended and modified the Boeing Plasma Interaction Model producing computer results in excellent agreement with flight data; receiving SPRT certification of the model. You have extended the Contamination model improving its accuracy, capabilities and efficiencies. Your actions have contributed greatly to our success. Thank you for your support."

2008 Rotary National Award for Space Achievement Foundation Steallar Team Award Nomination.
"For ISS Russian Computer Anomaly Response Team. For outstanding work to determine potential sources for the computer failures, develop recovery and workaround plans, and identify methods to continue operations without the support of computer controlled Russian systems, critical to the safe and successful operations of the International Space Station."

2007	NASA Group Achievement award: Solar Array Operations Team (Longeron Shadowing) "For exemplary leadership in developing critical solar array orientation strategies."
2007	Integrated Solar Array Constraints Team "For exceptional effort in defining the constraints related to US solar array motion, understanding the associated issues, and developing, implementing a mitigation plan to allow for the safe and stable operation of the US solar arrays in a wide range of nominal and off-nominal scenarios."
2007	ISS Space Environments "The ISS environments Team is recognized for sustained superior performance as noted in twelve consecutive NASA Award Fee evaluations of noted strengths and no weaknesses."
2007	ISS Computer Recovery and Contingency Operations Teams: "For outstanding work to determine potential sources for the computer failures, develop recovery and workaround plans, and identify methods to continue operations without the support of computer controlled Russian systems, critical to the safe and successful operations of the International Space Station."
2005	Boeing Pride Accomplishment Award "This accomplishment award is presented in recognition of your outstanding contributions, exceptional performance and initaitve on the development of the Histroy Thinner analysis tools which significantly reduce computational time for analysis of ATV thruster induced erosion and contamination of ISS sensitive surfaces. The dedication you have shown in performing your responsibilities is appreciated. Please accept this award with our sincerest congratulations and gratitude."
2005	LF1 Contamination Analysis Group. "In recognition of your outstanding attention to detail, responsiveness in a dynamic and chaning environment, and dedication to getting the job done, which contributed significantly to ensuring that the Interational Space Station and Shuttle were protected from the products of NOAX outgassing."
1999-2004	ASU Regents/President's Scholarship
1999-2004	Dean's List

Undergraduates Mentored:

Summer 2013	Bridget Steward / Prairie View A&M University, Prairie View, TX
Spring 2013	Lisa Swank/ Rice University Chemical & Biomolecular Engineering, Houston, TX
Summer 2012	Bridget Steward / HCC Engineering Honors student, Houston, TX
Fall 2011 – Spring 2012	Chloe Kempf / Rice University Chemical & Biomolecular Engineering, Houston, TX
Fall 2011 – Spring 2012	Jim Howe / Rice University Chemical & Biomolecular Engineering, Houston, TX
Summer 2010	Amanda Schlafer / HCC Engineering Honors student, Houston, TX

Teaching Assistant Classes:

Fall 2012	CHBE470 PROCESS DYNAMICS AND CONTROL (Dean's TA, taught classes, lead review sessions.)	Dr. Deepak Nagrath
Fall 2011	CHBE403 DESIGN FUNDAMENTALS	Dr. Ken Cox
Fall 2010	CHBE403 DESIGN FUNDAMENTALS	Dr. Ken Cox
Spring 2010	CHBE343 CHEMICAL ENGINEERING LAB	Dr. Ken Cox
Fall 2009	CHBE443 CHEMICAL ENGINEERING LAB II	Dr. Ken Cox

Publications and Conference Proceedings (Rice):

Smith, K., Verduzco, R. et al. "Control of All-Conjugated Block Copolymer Crystallization *via* Thermal and Solvent Annealing" *Manuscript in preparation.*

Smith, K.,Pickel D. L., Yager, K., Kisslinger, K., Verduzco, R. "Conjugated Block Copolymers via Functionalized Initiators and Click Chemistry" *Manuscript Accepted J. Poly. Sci. A.*

Guo, C., Lin, Y.H., Witman, M. D., Smith, K. A. , Wang, C., Hexemer, A., Strzalka, J., Gomez, E. D., and Verduzco, R. . "Conjugated Block Copolymer Photovoltaics with near 3% Efficiency through Microphase Separation" *Nano Lett.,* **2013**, 13, 2957

Smith, K.A., Lin, Y.H., Dement, D., Darling, S. B., Strzalka, J., Deanna L. Pickel, and Verduzco, R. "Synthesis and Crystallinity of Conjugated Block Copolymers prepared by Click Chemistry," *Macromolecules, **2013**, 46 , 2636.*

Smith, K.,Pickel D. L., Yager, K., Verduzco, R.. "All-conjugated block copolymers via functionalized catalysts and click chemistry" *245th ACS National Meeting* (Presentation)

Lin, Y.H., Smith, K. A., Kempf, C., and Verduzco, R. "Synthesis and Crystallinity of All-Conjugated Poly(3-hexylthiophene) Block Copolymers" *Polym. Chem., **2013**, 4, 229.*

Kempf, C. Smith, K. A., Pesek, S. L., Li, X., and Verduzco, R. "Amphiphilic poly(alkylthiophene) block copolymers prepared via externally initiated GRIM and click coupling" *Polym. Chem., **2013**, 4, 2158.*

Smith, K. A., and Verduzco, R. "Synthesis and Characterization of a Systematic Series of All-Conjugated Diblock Copolymers" American Physical Society March Meeting 2012 (Poster)

Publications and Conference Proceedings (Boeing):

Pankop C., Smith K., Soares C., Mikatarian R., Baba N.,. "Induced Contamination Measurements And Predictions For Jaxa's Micro-Particles Capturer And Space Environment Exposure Device" Journal of Spacecraft and Rockets vol 46 no 1 pg 39 2009

Schmidl, W., et al. "Degradation of Solar Cell Optical Performance due to Plume Particle Pitting." Proc. of SPIE Vol. 7069, 70690E; 2008

Smith, K., et al. "Space Shuttle Thermal Protection System Repair Flight Experiment Induced Contamination Impacts." 44th AIAA Aerospace Sciences Meeting and Exhibit; Reno, Nevada; 9-12 Jan. 2006.

Pankop C., Smith K., Soares C., Mikatarian R., Baba N., "Induced Contamination onto JAXA's Micro-Particles Capturer and Space Environment Exposure Device - Comparison of Predictions and Measurements". Proceedings of the 10th International Symposium on Materials in a Space Environment; Collioure, France, 19-23 June 2006.

Soares, C., et al. "Natural And Induced Space Environments Effects On The International Space Station." 56th International Astronautical Congress; Fukuoka, Japan; 17-21 Oct. 2005.

Soares, C., et al. "External Contamination Environment of International Space Station Externally Mounted Payloads". 56th International Astronautical Congress; Fukuoka, Japan, 17-21 Oct. 2005.